

Theory that Counts: To Oscar Ibarra on His 70th Birthday

Preface

This very special multiple issue of *Fundamenta Informaticae* is dedicated to *Oscar Ibarra* on the occasion of his 70th birthday. The contributions are on an invitational basis and have been refereed according to the usual standards of the journal. The editors want to thank the contributors and referees for their efficient and timely work.

It is no wonder that we got a very enthusiastic response from the contributors to our request. Oscar Ibarra is one of the leading researchers in the world in formal languages and complexity theory, and he has a well established visibility in the general theoretical computer science community. His scientific career spans a period of over forty years.

Having received his Ph.D. as a student of *Michael Harrison* in Berkeley in 1967, Oscar started to investigate multi-tape and multi-head pushdown automata, as well as stack automata. Also later on he has returned to several variations of these topics. His results concerning counter machines are fundamental in the field.

During his long career, Oscar has investigated various topics in formal languages, automata, design and analysis of algorithms, computational complexity, parallel computing, formal verification and DNA computing. This short Preface cannot do any justice to his publication list consisting of some three hundred items. As random examples we mention Oscar's two papers in *J.ACM* in the 70's about nondeterministic state complexity and an NP-complete number-theoretic problem, and his recent significant work concerning P systems. Oscar has been an invited or keynote speaker at many of the main conferences in Europe, North America and Asia.

Apart from visiting appointments, Oscar has been a professor at the University of California, Berkeley, at the University of Minnesota, and currently at the University of California, Santa Barbara. He has advised or co-advised 22 doctoral students. Many of the latter are now well established scientists themselves and have positions at universities in the United States, Korea and Greece. Some of them are working with companies such as Google.

Oscar has been involved in numerous editorial tasks such as editing conference proceedings and various computer science journals. He is the Editor-in-Chief of the *International Journal of Foundations of Computer Science*. During Oscar's leadership this journal has grown in size and considerably in recognition, as seen, for instance, from the impact factor.

Of the many awards and honors received by Oscar let the following be mentioned. He is a Fellow of Minnesota Supercomputer Institute, Institute of Electrical and Electronics Engineers (IEEE), American Association for the Advancement of Science (AAAS) and Association for Computing Machinery (ACM). He was chosen as the Outstanding Computer Science Professor at the University of California, Santa Barbara, in 1993. He has received the First ITL Infosys Distinguished Speaker Award, and IEEE Computer Society's Harry H. Goode Memorial Award.

Oscar enjoys high esteem in the computer science community in Europe. He was elected Foreign Member of Academia Europaea (Informatics Section) in 2008. The same year he was also awarded a Distinguished Visiting Fellowship from the UK Royal Academy of Engineering. Somewhat earlier he was elected member of the European Academy of Sciences (EAS), where he also received the Blaise Pascal Medal in Computer Science.

Oscar is a family man. He travels with his wife Naida and, in recent years, is always happy to show pictures and tell stories about his three grandsons. We wish him continuing success in science, as well as happiness in life in general.

*Juhani Karhumäki
Gheorghe Păun
Grzegorz Rozenberg
Arto Salomaa*

May 2011